



THE AUSTRALIAN

garden journal

OFFICIAL JOURNAL OF THE AUSTRALIAN GARDEN HISTORY SOCIETY

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Front Cover:

Narcissus bulbocodium, the Hoop Petticoat Narcissus.
A wonderful colonizer for the wild or woodland garden that will often flower in mid-winter.

(photo by Ed Ramsay)

Contributors to this Issue

Jean Galbraith

wrote for "The Australian Garden Lover" under the name "Correa" for fifty years. She is best known for her field guides of wild flowers in South East Australia, and still tends the Gippsland garden of which she writes here.

Jean Llewellyn

is Secretary and a member of the editorial panel of The Australian Geranium Society, which is the International Registration Authority for the genus *Pelargonium*. She has been heavily involved in the completion of the **Register of Pelargonium Cultivars**, and is also co-author, with Betty Hudson and Gordon Morrison, of **Growing Geraniums and Pelargoniums in Australia and New Zealand**, published by Kangaroo Press.

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John Ward

is a specialist in thin film optics from the Night Vision Group at the Defence Research Centre, Salisbury, SA. He investigates sundials as a hobby and is at present on a Churchill Fellowship study tour of the U.S. and Europe; the theme of his visit being "The Design and History of Sundials". In partnership with Dr Margaret Folkard, also a physicist at the Defence Research Centre, he manufactures sundials as a part-time business, and has completed a number of commissions for private gardens, churches, art galleries and consulates.

Pauline Tully

is proprietor of Tully's Plant Farm in Nicholson, Victoria. She spent three months overseas during 1983, visiting botanic and private gardens and tracing her family's ancestry — which she succeeded in doing back to around 1066 !

On Patience — and Perseverance

There has been a good deal of uncharacteristically lively debate in the pages of the horticultural trade press in recent months, revolving round the apparent demise of the "old-fashioned" nursery, with its friendly but unhurried service and wide range of plants, albeit arranged haphazardly, and its replacement by the big, bold and brassy "plant supermarket", with its promotional razmatazz and slick merchandising.

Many of us do prefer the small, often out-of-the-way, nursery where it is possible still to browse and unearth a few "treasures"; we are sometimes confused by the "names game" played by the big nurseries which often seems to make a mockery of cultivar names.

But most people who buy plants are bedazzled by the concept of instant gratification. They like instant meals from a microwave oven, (almost) instant travel, instant coffee and instant mashed potato, so why not instant gardens? The day when they will be able to go the local plant supermarket and buy an instant garden kit (Type A, B, or C according to personal preference) may not be far off.

We forget that the most important attribute that a gardener can possess — one which in fact is essential to success — is patience; patience in learning about plants, where they will grow and how they grow, their particular needs and peculiarities, patience in watching them grow and develop, in learning about the soil in one's plot of ground, the wind patterns and the interaction of sun and shade. And we forget that this learning can only properly be acquired by observation — in our own and others' gardens.

An American writer said recently "we are apt to promulgate horticultural laws based on a single instance". For example one

gardener may say, with an air of authority, "you can't grow shasta daisies here" — so no one does. Often this kind of dogma has been handed down, and altered in the process, from one "authority" to another; "Belladonna lilies may not flower for a year after being divided" becomes "Belladonna lilies should not be divided", so another "law" is made, based not on observation but on someone's carelessness or laziness in not checking the facts. If these "laws" were not occasionally challenged we would still be treating *Camellia japonica* as frost tender and would never have discovered that an occasional dose of dolomite is good for azaleas. The process goes on; for example for years it was thought that the optimum pH for soil-less potting mixes was in the range 6.5 to 6.8 — the same as for most plants grown in the open ground — but now an American researcher, challenging that assumption, has discovered that it is, in fact, nearer 5.2. The "laws" are constantly being rewritten.

This applies particularly to the question of cold hardiness. If a plant dies during a cold winter the assumption is made that it died of cold, so "you can't grow it here". But it is just as likely to have died because the soil around it became waterlogged. You can't control the climate, but you can rectify inadequate drainage. Here is an adage that is worth remembering "You can't say you have failed with a plant until you have killed it three times".

Tom Garnett, elsewhere in this issue, makes the valid point that "the gardening scene (in this country) is so dominated by the professionals that the amateur . . . has lost, or never possessed, the confidence to go his own way". Nurseries and landscape designers (not all of them, admittedly, but many of them) are out to sell instant gratification — which often leads to horticultural disaster.

There is no such thing as an instant garden. Gardens are made by hard work, loving care, and the skill and knowledge that is acquired from careful observation, experiment and adaptation. There is no substitute for patience and perseverance.

TIM NORTH

Tom Garnett

was a schoolmaster for forty years, twenty-one of them as a headmaster. On his retirement in 1973 he and his wife set out to grow native Australian plants at Blackwood, 2000 feet up and to the north-west of Melbourne. On a visit to England in 1980 they found more than a thousand gardens open to the public, so on their return they resolved to do something similar, reasoning that too few gardeners get an opportunity of seeing gardens and plants at all times of the year.

Polly Park

is an American living in the Canberra suburb of Red Hill. There, on a small suburban plot, she has created a garden — or rather a series of gardens — of outstanding beauty, along purely classical lines. She once entered a garden competition, and was denied a prize because "there weren't any flowers". She lectures on the History of Gardens, from early Egyptian gardens to the present day.

Wendy Littlewood

has an Arts Diploma from Newcastle Technical College and is now working as a freelance artist in Sydney. She and her husband live in a mid-nineteenth century terrace house in East Sydney, and Wendy is now researching the early history of the area.

A Price Increase

The Australian Garden Journal is not, unfortunately, immune from the effects of inflation. The major "slug" that has hit us this year is a 17.5% increase in postage rates for registered publications, which came into effect on the 1st March last. Then, of course, there are all the little increases that add up to one quite hefty one — stationery, telephone, etc. etc. — not to mention the basic cost of existence. The only increase which we cannot complain about is wages — we don't get any nor do we pay any! But, regrettably, we now have to make a small increase in the cost of the Journal, just to keep level with inflation.

From the August issue onwards, the annual subscription will be \$15.00, or \$2.50 per copy. As a special concession, however, all those who are due to renew subscriptions in August and who choose to do so **before 1st August** may do so at the old rate of \$12.00.

This does not, of course, affect members of the Australian Garden History Society, who receive the Journal as a benefit of membership. Subscription rates for the A.G.H.S. for 1984/85 are given elsewhere in this issue.

The Origins of Classic and Romantic Thought

by Polly Park

Our gardens are classic in style — yours, perhaps, are romantic. What do we really mean when we use these terms, classic and romantic? How did these very different forms of art originate, and from where?

Most of us have the seeds of both classic and romantic thought and yet one or the other is usually dominant. Classic minded people tend to think with their head. When planning a garden, for instance, they are inclined to see their garden as a total picture which expresses a single theme or mood. The components of the garden (the flowers, trees, architecture, water, etc) are arranged in such a way as to express that theme. They shun compromise.

The romantic minded designer thinks with his heart. He seeks to evoke emotion into his design, preferably a series of emotional surprises. A well planned romantic garden provokes a superlative of endearing adjectives. The English are masters of this art. Winding walks with little surprises at each bend, an old wooden bench and beside it a tub of lavender, roses climbing over an ancient cottage, wistaria spilling over an old stone wall, daisies and buttercups growing between the stones of a walk, anything, everything that will cause the viewer's heart to skip a beat and the more beats that are skipped, the more successful the romantic garden.

Both art forms stemmed from an unselfconscious desire of a people to express themselves artistically. It is necessary, therefore, that we go far back into history and take a close look at the societies from which classic and romantic art originated, and the formulas that they devised which are as applicable to your thoughts and mine to-day when laying out our gardens as they were many hundreds of years ago when romantic and classic art in Europe first found its expression.

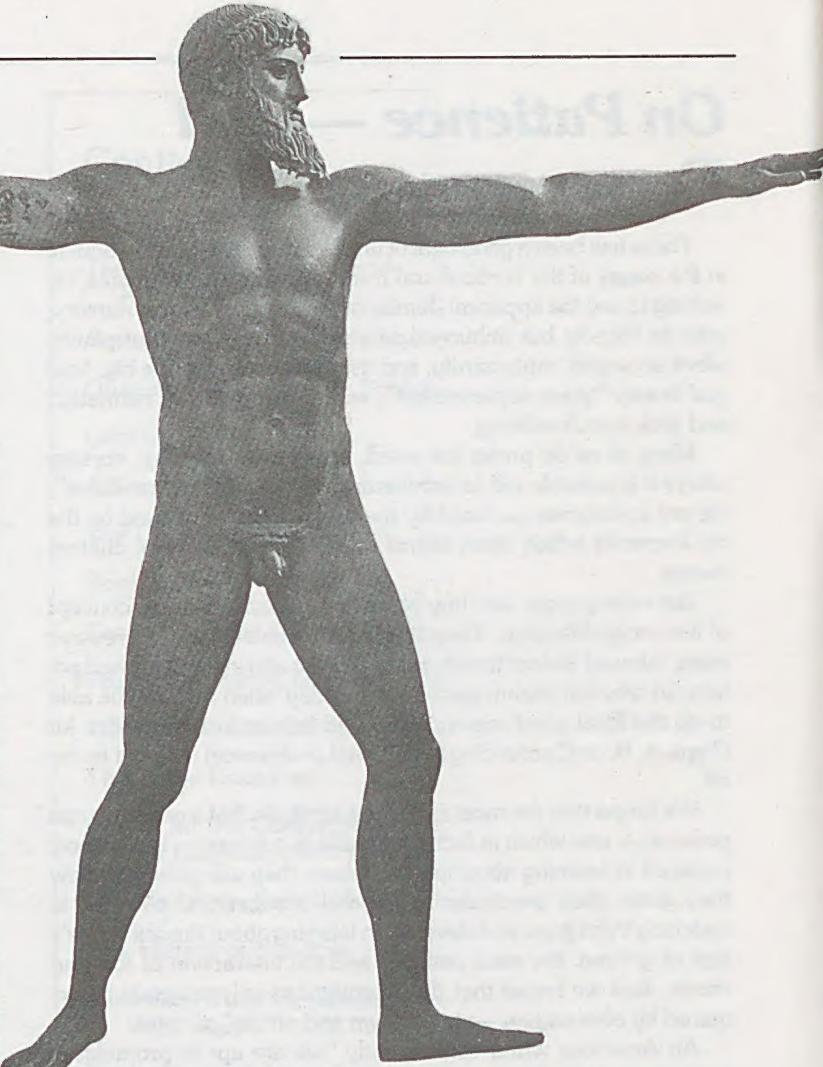
Classic art in Europe has its origins in the early Greek civilization. The miracle of Athens was its democratic form of government. For never before in history had a body of leaders been freely elected to represent the people whom they would govern.

The enthusiasm that the Greeks felt for their democracy was revealed in their words and deeds. Poets, philosophers, law-makers, teachers and artists willingly gave of their time to promote idealistic, universal messages of right thinking and right living to the people as a whole and to the youth of the nation in particular in whose hands lay the future of their beloved democracy.

The artist was revered in Greek society and his gift considered to be "divine". Therefore, upon his shoulders lay an even greater responsibility for the promotion of inspirational messages, for his art would be seen by all.

It was the Greek way not to show facial expression. Rather the viewer was required to interpret the artist's message through the total action and the position of the human figure. Classic art requires definition. This is why it is called the art of the intellect. In studying a Greek statue, for instance, one must observe closely each and every part of the body, the head, torso, and the limbs, for each has been designed by the artist to contribute to the whole — the message.

Let us take an example. In the marvellous third century B.C. statue of Zeus (the supreme ruler over all the Greek Gods) he stands naked in order to reveal the power and strength of his muscular body. His arms are outstretched as if in the act of throwing a thun-



derbolt, and his head is turned in the direction of his target. Although his face is expressionless, the overall appearance of his head denotes dignity and intelligence.

The Greek viewer, after careful scrutiny, would conclude that the message the artist was conveying was that all who seek to rule should possess those qualities of dignity, strength and wisdom.

This classic formula of the Greeks was later adopted by the Romans, though in the very act of copying from another country, something of the natural spontaneity seen in Greek art was lost.

Translated into garden design we can now see that the classic garden designer should first have his theme and mood well in mind, and having established that, he must then arrange all the components of the garden (the flowers, trees, architecture, water, etc) so that they assist in emphasizing that theme, with colour also playing its role.

Most people think of the classic garden as being strictly a formal geometric layout such as the French or Italian garden. But there are many other variations of designs that are also classic, yet have no allees nor parterres. The Japanese garden, even the great 18th century Capability Brown gardens in England, neither of which contain straight lines or symmetry, are classic in design because, like the Greek statue, they present an overall theme which is strictly adhered to in the manner of a landscape painting, with all of the components carefully arranged to contribute to that theme. Do you see what I mean? Capability Brown was a classicist to his very finger tips. He saw the English landscape as a painter would see it, as a total classic picture. But he had the misfortune to live in a country of romanticists, people who desired immediate, emotional responses in their gardens, and his art was therefore short-lived.

But it was his gardens that elevated the English garden to world class where to-day it ranks among the top seven classic gardens of the world, along with the Persian garden, the Moghul gardens of India, the Moorish gardens of Spain, the Japanese, Italian, and French; and because of him — the English. Which leads us now to the romantic mind and its origins.

Romantic art originated with the Lombards, a Teutonic tribe of barbarians who swept down over Italy after the fall of Rome, plundering and killing as they went until they finally settled in the plain north-east of the Appenines which to-day bears their name. All of that north-eastern region of Italy had been a mere province of the Roman Empire, where only the thinnest veneer of classic thought had existed. Like the cantons of Switzerland, mountains in those days separated the minds and the lifestyles of many people and this was the case in Italy. Not only did the mountains separate the people, but the people themselves, the Romans and the Lombards, had altogether different origins.

Thus, in time, when the Lombards developed an art form of their own it was a spontaneous art which reflected the thoughts and feelings of a younger society which had inherited little of the ancient, classic traditions of Italy's south. Their art was one of emotion and immediate response which they superimposed upon the veneer of the classic art of which they were aware. Everything that could evoke an emotional response for the viewer was used. This was achieved in a number of ways. Instead of the relatively clear skies, tranquil landscapes and the well spaced expressionless figures seen in classic paintings which required study and interpretation, the Lombards painted cloud filled skies (sometimes even threatening as if a storm was about to break) and their figures were clustered together in dramatic scenes, their actions and facial expressions revealing at an instant the message that the artist wished to convey to the viewer. Light and atmosphere played an important role for its contribution towards feeling; likewise colour which became brighter and clearer.

Venetian artists became the masters of the romantic art of the Lombards. The great port of Venice, in the north-east of Italy, traded heavily with northern European countries, and it was therefore natural that the art of the Lombards should eventually find its way first to the Lowlands (Holland and Belgium) and later to Germany and England. It was an art that was easily accepted by the nations to the north who were only just emerging from the long, fearful period of the Dark Ages. Besides, northern Europe had little contact with or knowledge of Rome's classic traditions. An exception to this was England's Renaissance King Henry VIII, who was tutored as a child by the two great humanists, Erasmus and Sir Thomas More. Henry was well aware of the art and traditions of southern Italy, and when he became King he imported Italian artists into England. But subsequent to his divorce and acceptance of the new Protestant faith he was forced to close the door on "Popish" Rome, and he turned to the German artist, Holbein, as his court painter. Later romantic artists such as Van Dyke, Lely and Kneller assisted in placing England firmly in the romantic camp. A burst of interest in classic art occurred in England in the 17th century when wealthy Englishmen made the "Grand Tour" of the continent and saw for the first time the classic art of Italy and France. This led them to encourage their artists at home to paint in the same style which was termed the "grand manner". This also led to their desire to imitate the Roman landscapes seen in the paintings of Poussin and Claude Lorrain in their own countryside. While the English painters had only a minimum of success in their adoption of the classic style, their garden designers moved ahead in a slow but steady path towards greater glory until the final icing on the cake was realised by the great landscape designer, Capability

Brown, in the mid-18th century. But even at the height of his success, criticism of his flowerless landscapes was provoking great anger among the English writers of the day, which amounted to a veritable artistic civil war between a minority of classic-minded Englishmen and the great majority who wished to return to the more intimate, emotional gardens.

There was a new nationalistic feeling in Britain in the later years of the 18th century, a desire to cast off foreign imports in architecture, painting and garden design; a wish to assert "Englishness" in all fields of endeavour. Pride in their country and most especially in its landscape, not an artificial landscape but one that was real, was revealed in the paintings of the English artist John Constable. The love of instant emotion that tugs at the heartstrings is seen in the dramatic paintings of Turner. Romantic gardens began to dot the landscape of England. The individual flower, the love of nature in even its wildest forms, was embraced by all. Germany, too, and all of northern Europe returned once more to the romantic, and has remained so to this day. Those early Lombards would have smiled with great approval at the enormous success of the romantic child which they had borne.

England's gardens became Australia's gardens. The romantic heart and soul of England became the heart and soul of Australia, regardless of the totally different climate, landscape and colours of the two countries. Mother England was the example that all would follow. This would be reinforced in later years by the English born garden designer, Edna Walling, who through her prolific writings taught all Australians the English way of gardening. But in her later years Edna Walling, like all migrants to a new country, became more and more aware of the Australian landscape and began to incorporate Australian native flora into her garden designs and at times even began questioning the value of a totally English garden in the Australian landscape.

To-day Australia is at the threshold of its own "coming of age". A new nationalistic feeling is abroad. It was this nationalistic feeling which brought about great artistic changes in most of the countries of the world throughout history. Are we ready yet to assert ourselves in an all Australian garden design, recognizing our own native flora, our own very special light (so different from that of Europe), our own colouring and landscape in this unique continent? Will there someday be an Australian garden design that can take its place among the great classic gardens of history?

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All correspondence should be addressed to the Secretary.

Subscriptions

All subscriptions fall due for renewal on 1st July, and renewal notices are enclosed with this issue of the Journal. Those who have joined since 1st April this year have been given the benefit of membership until 30th June 1985, and so are not now required to renew.

Subscription rates, which have been unchanged since 1982, have been reviewed in the light of increased costs, such as postage, stationery, telephone and increased production costs of the Journal, and it has been decided that a small increase in rates will have to take effect this year. The new subscription rates for 1984/85 are as follows:

Ordinary membership — \$18.00

Family membership — \$25.00

Corporate membership — \$30.00

It is pointed out that the ordinary rate of membership covers **one** person only, and does **not** include spouse or other relative. Some of the Society's activities, including the Annual Conference, have to be restricted to members only, otherwise they would be over-subscribed. A family membership covers husband and wife, and any children under the age of eighteen living with their parents; corporate membership carries an entitlement of up to **three** tickets for all members only activities.

Subscriptions should be renewed as soon as possible, to avoid the necessity of sending out reminder notices. Subscriptions not renewed by 1st October will be deemed to have lapsed and no further reminders will be sent.

Executive Committee

Under the Society's Constitution the following members of the Executive Committee, having served continuously for three years, are required to resign at this year's A.G.M., but may offer themselves for re-election:

Mr Howard Tanner (NSW)

Mr Peter Watts (NSW)

Mr Chris Betteridge (NSW)

Mrs Oline Richards (WA)

Mr Tony Whitehill (SA)

Mrs Pat Cameron (Tas)

Nominations for the Executive Committee will now be accepted from properly constituted State Branches or from any individual member desirous of making one. All nominations must carry the signature of the proposer and that of a seconder. The only qualification required is that the person nominated must be a financial member of the Society at the time of nomination.

Nominations should be forwarded to the Secretary so as to reach him by **30th September 1984**; nominations received after this date will be invalid.

Annual Conference, 1984

The Annual Conference this year will be held in Ballarat, Victoria, on the 9th, 10th and 11th November. It will focus on the gardens of the goldmining era in the Ballarat district. The keynote speaker will be Professor Geoffrey Blainey, A.O., who will establish the lifestyles, value and environment of the era, and the settlers' attitudes to their new surroundings. Further speakers will explore the development of the cottage garden, growth in the nursery trade, the establishment of several country estate gardens, and the city's botanical gardens. Tentatively the main gardens to be included are:

Belmont — with its timber lattice fernery and lynch gate.

Hillside — with ephemeral old-world planting.

Mawallok — a Guilfoyle garden.

Mount Boninyong — one of the oldest surviving domestic gardens in Victoria.

St. Erth — a plantsman's garden.

Trawalla — a substantial rural homestead complex, little changed since the 1890s.

In addition, several delightful cottage gardens, some only recently "discovered" will be visited.

The outline programme will be as follows:

Friday 9th November

Buses will leave Melbourne and Tullamarine Airport, for Ballarat via Blackwood. Final departure from Tullamarine will be at 10.30 am.

Visit Garden of St Erth at Blackwood.

Picnic lunch, then drive through Reservoir area, looking at some small gardens on the way.

Book in at Old Ballarat Village Motel, then walk across to Sovereign Hill to look at cottage gardens.

Pre-dinner drinks and dinner at the Victoria Theatre, Sovereign Hill.

Lecture by Professor Geoffrey Blainey after dinner.

Saturday 10th November

Visit Belmont, Hillside and Mawallok.

Lunch at Mawallok.

Visit Trewalla.

A.G.M. in motel at approximately 6.00 pm.

Dinner in motel, followed by short talks, to include Barney Hutton on "Thomas Lang" and Peter Cuffley on "Cottage Gardens".

Sunday 11th November

Talk by Tom Garnett on "Victorian Botanic Gardens and the 150th Anniversary".

Visit Mount Boninyong, Gilfillan's cottage garden at Boninyong and Boninyong Botanic Gardens.

Lunch in Ballarat Botanic Gardens, followed by a talk on the gardens by Bob Whitehead and a guided tour.

Buses will leave for Tullamarine and Melbourne at approximately 3.45 pm.

It is hoped that it may also be possible to arrange an optional tour for the Monday morning, to Naringal (an Edna Walling garden) and Linton Park; details about this will be published later.

Registration brochures will be available from Mrs Jocelyn Mitchell, Conference Convenor, at 41 Howe Crescent, South Melbourne, 3205, from **15th July onwards**. Numbers attending will be limited to approximately 120, and all applications will be dealt with strictly in order of receipt; **registration will be by official form only**.

The registration fee has yet to be finalised, but will be not less than \$90 nor more than \$100 per person. This includes dinner on Friday and Saturday nights, lunch on all three days, morning and afternoon teas where provided, and bus travel on all three days.

Accommodation will be at the Old Ballarat Village Motel, at a range from \$17 (single) and \$20 (twin) to \$32 (single) and \$38 (twin) per night.

Concession airfares, through Ansett Airlines, may be available for parties of fifteen or more travelling on one flight. Further details of this facility will be circulated with the registration brochures.



Mount Boninyong, soon after the new homestead was completed in 1884 : the garden still follows the same general form, evident in early photographs.

Ballarat became more genteel and family-minded, East Ballarat sank into further dissipation; but, perhaps because of this, the East had more colour and atmosphere.

Ballarat was distinctive in that its citizens poured money into public rather than private display. The city and its lake and gardens were beautified, statues imported by a benefactor from Carrara, an art gallery was founded. Aware of its identity and achievements, the city at times (in the minds of its more literate inhabitants) could detect a parallel with Athens and Florence, and if the comparison was a little stretched, Ballarat could boast a special place in the history of Victoria.

(Adapted from "Ballarat, a guide to buildings and areas, 1851 to 1940" by Wendy Jones, Nigel Lewis, Elizabeth Vines and Richard Aitken, with a foreword by Professor Geoffrey Blainey; published by Jacobs Lewis Vines, architects and conservation planners, 1981).

Ballarat — an historical introduction

Ballaarat (the Aboriginal word for "elbow space") was a rich alluvial flat, a favoured hunting ground before the arrival of the white man in the 1830s. Much of the area was then taken over by the Scottish cousins Yuille, whose sheep flourished on the grassy plains. Their tenure, however, was brief, for the quiet pastoral settlement was torn apart by the discovery of gold in 1851. Men flocked to Victoria from every corner of the world and canvas towns sprang up besides the fields.

The site for a township was surveyed by W.S. Urquhart as early as 1851, and the first sales were conducted in 1852. This was the origin of West Ballarat, in which were established the military camp and the Gold Commissioner's office; the majority of the miners, however, lived in tents or shanties in what was to become East Ballarat.

The frustrations and disappointments of the gold rush, exaggerated by inflexible and sometimes corrupt officials, led to the incident known to history as the Eureka Stockade, in which a minority of the protesting miners fought with a military detachment; the Eureka Stockade was later to become a symbol, adopted by various political groups, for democracy and independence.

For the first ten years the two towns, West and East, developed separately; the West was genteel, favoured by professional and business men, the East popular and rowdy.

By 1861 the city had settled down, and it became the exporter of capital, management and machinery to other gold fields. It became the railhead for a large part of western Victoria. The 1860s was the chief decade for building in West Ballarat and imposing public buildings were erected. By 1871 9.2 million ounces of gold had been mined and on its golden foundations Ballarat had built a considerable industrial city; it was the largest gold city the world had ever seen — until the rise of Johannesburg. But as West Bal-

State News

South Australia

On Sunday 15th April forty members and friends visited "Old Anlaby" at Kapunda — about sixty miles from Adelaide.

A formal meeting will be held during June (date to be notified to all South Australian members) to formally constitute a South Australian branch of the Society, and to elect a Branch committee and officers.

New South Wales

On Sunday 15th April approximately 120 members and friends gathered for "A Day of Enjoyment" in the Hawkesbury region, north-west of Sydney. The day started at "Hobartville" at Richmond, a historic property built for William Cox junior in 1828; it was and still is a well-known thoroughbred stud, and the first bloodstock sales in Australia were held there in the 1880s. The garden has been extensively modified, but some notable trees remain and there is an extensive grove of bamboo.

At "Waterford" on the banks of the Hawkesbury River, Bob Power, who has lived on the property since 1932, showed us his unique collection of old farm implements and local artifacts.

Australian Garden History Society (continued)

After lunch in Powell Park at Kurrajong Heights, visits were made to "Mahu Meru" (Sanskrit for "the centre of the earth") with its interesting collection of proteas and other South African flora, and the Coach House, a "bijou" property dating from about 1900. The final call was to Ray's Orchard at Bilpin, an apple orchard property with a prize-winning garden established about fifty years ago; it contains a number of unusual plants.

Future activities planned by the two New South Wales Branches (Sydney and the north, and the A.C.T. and the south) include:

Sunday 20th May: a garden walk around contemporary gardens in Sydney's eastern suburbs.

July: a lecture (details to be announced).

September: visit to Wollongong Botanic Gardens and Rhododendron Park.

October: tour of gardens in the Bowral/Moss Vale district.

Victoria

A report on a visit to "Ripponlea" appears below. In April members visited the garden at Pirianda, in the Dandenongs.

Future activities that are planned include visits to Heronswood, at Dromana, and to Heide, at Bulleen.

Ripponlea

About sixty members and friends gathered at Ripponlea, in Elsternwick, in mid-February for a guided tour of the garden.

Professor Carrick Chambers, head of the National Trust committee which administers the garden, first gave a short talk about its history. As the resident peacocks prowled around the 1930s swimming pool and deer gathered on the rolling lawns, he asked us to imagine how the now verdant site would have looked in the 1860s, when Frederick Sargood acquired it — marshy ground dotted with stands of river red gum, yellow box, banksia and perhaps swamp melaleuca. He then explained how Sargood transformed his holding, which in its heyday was 43 acres in area.

Professor Chambers touched on features about the garden which are still not fully understood, including the water supply (some of which comes from up to four kilometres away) and the intricate 19th century underground drainage system. He underlined the difficulties of managing an historic garden such as Ripponlea, and of setting policy in such a place (the wear and tear of thousands of visitors annually can count against totally accurate historic restoration).

We then split into two groups, one led by Professor Chambers and the other by Ripponlea's energetic head gardener, Oliver Frost.

Mr Frost's intense interest in the garden was evident at every turn, particularly in the fernery — which is about to undergo restoration — the rock garden and the orchard, where 160 varieties of apples and pears have been planted, as well as 33 varieties of vines. Many of the apple stocks, he told us, had been gathered from a keen gardener who had grafted 200 varieties onto one tree.

We are most grateful to Professor Chambers and Mr Frost for giving their time to explain to us more about what is widely regarded as Melbourne's finest surviving private garden from the Victorian era.



Honour for Tasmanian member of the AGHS

W.F. (Frank) Walker, of Sandy Bay, Hobart, has been awarded the Veitch Memorial Medal by the Royal Horticultural Society. This medal is awarded to those who have helped in the advancement and improvement of the science and practice of horticulture. Last year Mr Walker was made an Officer of the General Division of the Order of Australia for services to horticulture. He is a Past President of the International Society for Horticultural Science.

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**Macadamia and
hard shell nuts**

Opening Gardens to the Public

by T.R. Garnett

One of the ideas put forward by the Gardens and Environment Committee of Victoria's 150th Anniversary Committee has been that private gardens should be open during the year of celebration. But those responsible for making the arrangements are finding considerable reluctance among owners to open their gardens.

These objections seem to spring from three fears:
that their privacy will be invaded;
that thieves will take the opportunity to rob, or make plans to rob the house;
that the garden will be damaged and plants stolen.

I have been asked to write about our own experiences since this garden has been open seven days a week all the year round since October 1980. Evidence that there is a public desire to look at such private gardens is provided by statistics. These are kept in three-month periods; the number (except during the fire period of 1983) of visitors has been consistently double that of the corresponding period of the previous year, though there has been little advertising.

Our motives for opening, when we started, were multiple but fairly straightforward:

1. The planted area is about four hectares, and we foresaw that we should not be able to maintain that area, especially as we grew older, without paid help; and that we could not afford such paid help unless the garden was registered as a business. We have therefore, from the beginning, charged an entrance fee, putting an honesty box and a pamphlet at the gate (more of that later).

2. On a visit to England in 1980 we found that there were a thousand gardens open to the public. By 1983 that number had risen to fifteen hundred. You can buy, at most bookstalls, well illustrated booklets entitled "Visit an English (or a Scottish, Welsh or Irish) Garden", and there are other publications with a similar theme. It seemed to us that, although the population of Australia is much less than that of Britain, there must be a large number of people who would welcome similar opportunities to visit gardens in their own country.

So far no one connected with the tourist industry has shown the slightest interest. It is difficult at this moment to imagine a publication "Visit an Australian Garden", though some publicly owned gardens in the Dandenongs are deservedly promoted. Imagine a tour organized in Great Britain or America to visit gardens in this country, though journeys the other way are commonplace!

3. It seemed to us that, in a country where the range of plants which can be grown is so immense, the gardening scene was so dominated by the professionals — the nurserymen, those in charge of public gardens, the landscape designers, the "experts" — that the ordinary amateur gardener, who provides the backbone of the pursuit everywhere, has lost, or never possessed, the confidence to go his own way. This has been partly because he has not had the opportunity to learn about a wide range of plants at all times of the year. There are flurries of activity to look at gardens when they are spectacular — at rhododendrons in the spring or coloured leaves in the autumn, but not at other times of the year, such as in winter when the bones of a garden show; and in the gardens he does visit few plants are labelled.

But let us look at the fears in turn.

Privacy. Yes, of course there is some loss of privacy. But to balance that you meet all sorts of interesting people, from many of whom you can learn much. Gardeners like to talk about their enthusiasms, and the most reliable way to conserve the less com-

mon plants is for gardeners to exchange them with each other. The lack of privacy would be more oppressive in a smaller garden, but in a large one you can put certain areas out of bounds. And you do not have to open every day.

Possible thieves. Unoccupied houses in this area are constantly being broken into. Consequently we never leave the place unattended, as we should not leave a child, and should not do so even if the garden were not open. When we go away, we get someone to live in. It could be argued that the constant presence — or potential presence — of people in itself affords protection.

We often wonder how many of the rubbernecks who drive up, take a look at the house and drive away are, in fact "casing" it. We even write down the numbers of some cars.

Damage. Because the garden is somewhat remote and not easy to find, and because we tend not to have eye-catching displays to tempt the merely curious, our visitors tend to be what I should call real gardeners. As I have written before, most gardeners, though covetous, are not dishonest or mean. No doubt a few cuttings are nipped off (and had the nippers asked, we should generally have accommodated them).

We try to label all plants. The labels are not beautiful, but they can be read without trampling on the beds. You soon accept them, as you accept dramatic conventions. We have lost a very small number, but have no clear evidence that any were pinched.

We have no means of checking whether everyone puts their money in the box. Occasionally it is clear that none has been paid, sometimes for the forgiveable reason that the culprit has no change (the only lady ever challenged — legitimately as it turned out — broke into torrents of abuse!). Once a small boy was found helping himself out of the box, but his grandmother spotted him too, and her wrath was greater than ours.

When there are bus-loads, we tend to stay in the garden, partly to answer questions and partly to keep an eye on things. On Daffodil Sunday there may be more than five hundred people in the garden at once; we provide literature on that occasion only. A child has picked a magnolia blossom, but that is all.

We take out a Public Risk Insurance. Our main trouble is lack of toilets — we have only a bush dunny.

So our advice is — don't be frightened.

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Letters

Dear Tim,

What's in a Name? Shakespeare would have us believe that there is little for "a rose by any other name would smell as sweet".

Yet there are some members of the Australian Garden History Society who don't agree with Shakespeare and consider names to be very important.

There is a move to change the name of the Society to something else, so far undetermined, but all suggested alternatives have one thing in common, the removal of the word "History" from the title.

In considering any such change it is important to go back to the founding of the Society and to understand why it was created as a Garden History Society rather than any other sort of Garden Society. As a founding member I recall the enthusiasm generated at the thought of a learned society formed to study this particular facet of Australia's history and, despite some knockers, much information has come to light in the last four years, either directly through the activities of the Society or through its encouragement of people to undertake research.

To those who consider the inclusion of "History" in the Society's name as being restrictive I would suggest that it is their interpretation of the meaning of history that is the restricting factor. For garden history has to do with the total story of garden development in this country, the people who created gardens, the changes in design through social pressures or mere gardener's whims, the plants used and changing methods of propagation to name a few. If this broader recognition is given it will be realised that gardens being created to-day are as much part of Australia's garden history as those of last century, and that all garden interests are catered for in the word "History".

As a member of the Society's Executive Committee I am proud to be a member of the Australian Garden History Society. I doubt that I would be willing to act in a similar role for an Australian Garden Society or some other nebulously titled organization. In fact, along with other members with whom I have spoken, I would not remain a member of such a Society but rather would actively work to form a new Society with the title "Australian Garden History Society", which option has been suggested to me by several members.

At a time when our membership is growing at a rate which indicates a deepening interest and awareness of our garden heritage I think a name change would be disastrous. We cannot afford to risk splitting the Society with name changes which would reduce rather than increase its standing. Rather let us spend our energies in pursuing the aims for which the Society was formed. Bearing in mind the current rate of membership growth of 220% per annum and our apparent success as a team the following quotation seems to have some pertinence:-

"We trained hard, but it seemed that every time we were beginning to form up into teams we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing and a wonderful method it can be for creating the illusion of progress while only producing inefficiency and demoralisation": (Petronius Arbiter, AD 66).

Please, let us leave our organization, including its name, as it is.
Richard Ratcliffe,
Pearce, A.C.T.

A Tropical Conservatory for Adelaide

Conservatory Proposal

A new conservatory to house tropical plants and trees is planned for Adelaide (Fig.1). As an architectural design it will be unique in Australia — as an educational tool it is essential to teach school children and adults as well as to researchers — as an amenity it will re-affirm the role this State has in providing high quality conservatory displays — as a tourist attraction it will complement large conservatories in Queensland and New South Wales.

The graceful semi-circular paraboloid structure will be established in Botanic Park and will have a radius of 42 metres and a height of 22 metres above ground level, which is the same height as the surrounding trees. Its main entrance will face into the gardens along the historic Moreton Bay Fig Avenue. It will cost about \$4.5 million.

The Tropical Conservatory will provide an opportunity for visitors to see for the first time rare tropical plants and trees ranging from the beautiful to the bizarre. Many tropical plants are kept in the nursery at the Adelaide Botanic Garden because no display space is available; for the same reason others have never been introduced.

The major existing conservatory (Fig.2) in the gardens is now more than a hundred years old, and whilst its beauty and heritage value are obvious, it cannot provide the space and modern growing facilities needed. Another conservatory, the Schomburgk Range, about thirty years old, has structural limitations for the purpose of growing large tropical plants. It replaced a conservatory which was demolished about thirty-five years ago to facilitate expansion of the Royal Adelaide Hospital.

The new Tropical Conservatory will occupy 2,700 square metres or about one per cent of the area of the park. The project has received the support of the Adelaide City Council, S.A. Association of Nurserymen, Royal Australian Institute of Parks and Recreation (S.A.), the National Trust (S.A.), the Royal Australian Institute of Architects (S.A.) and the Australian Institute of Horticulture (S.A.) amongst other professional bodies.

A Logical Site

Botanic Park is the only logical and suitable landscape location to establish a conservatory with the maximum display area to house large tropical rain forest trees and vegetation. The open, grassed area where the conservatory is to be sited was identified in Dr Richard Schomburgk's 1874 plan as a focal point for horticultural exhibitions.

Adelaide architect and consultant to the Board, Mr Guy Maron, of Raffen, Maron Architects Pty Ltd, selected the site after considering alternatives which proved impracticable. He is the eminent designer of the National Botanic Gardens Tropical Conservatory, Canberra, and has won numerous architectural design awards over many years.

Botanic Park, as its name implies, was established under the Botanic Gardens Act to preserve and to display large botanical specimens which were not in keeping with plans for the more formal botanic garden. Its beauty is the result of careful planning and management by the Board of the Botanic Gardens and its staff. It is an integral feature of the botanic gardens complex and has an entirely separate role to that of the parklands which surround Adelaide. Its distinctiveness makes it highly popular with thousands of South Australian families who enjoy its quiet recreational atmos-



AN ARTIST'S IMPRESSION OF THE NEW TROPICAL CONSERVATORY.

sphere and facilities every year. Improvements being considered by the Board will preserve its present historic character and ensure that its traditional recreational use will remain unchanged.

Many of the trees established in Botanic Park last century now have a life span expectancy of less than two decades, so that new shade trees are being planted progressively to ensure that the total character of Botanic Park is maintained. Pedestrian walkways will link the Botanic Gardens, Adelaide Zoo, Hackney and Frome Roads with the Tropical Conservatory, making the whole area more accessible and attractive to the community. Improved car parking arrangements are also under consideration. The overall planning will ensure that Botanic Park continues to be used for the purposes for which it was originally established, and that future generations will have the opportunity of enjoying its tranquillity. Establishment of the Tropical Conservatory will provide an additional feature for community enjoyment.

Construction

The Tropical Conservatory will be an elegant, curved amphitheatre of clear toughened glass supported by a steel tracery. It is designed to harmonise with its environment and to be visually attractive when glimpsed through open areas from various parts of the park.

Air conditioning will provide acceptable heat and humidity conditions for tropical plants up to 20 metres high, as well as for smaller trees, shrubs, undergrowth, ground herbs, vines, and other species which grow within the tropical rain forest environment. Temperatures will range from a minimum 16 degrees Celsius overnight, to a short-term daytime maximum of 38 degrees Celsius and a relative humidity of 85%.

Two internal aerial walkways will enable plantings to be viewed within the canopies of some of the smaller species, as well as from ground level paths, while ponds will provide still water suitable for water lilies and other aquatic plants. Access for wheelchairs will be provided. The interior will be landscaped to provide a natural undulating tropical rain forest floor.

Conservation

The Botanic Gardens of Adelaide are involved in conservation and propagation of endangered plant species through the I.U.C.N. Threatened Plants Committee. Currently there are more than 500 species on the endangered list from all parts of the world growing at Adelaide, Wittunga or Mount Lofty Botanic Gardens.

Establishment of the Tropical Conservatory will help the process of conservation of Australian tropical rain forest species which may never otherwise be seen by South Australians. Endangered species from Papua-New Guinea and the Pacific Area will also be included in the Conservatory display as a matter of policy for helping the conservation movement in those areas.

Further Information

Further information about the Tropical Conservatory Project and the Adelaide Botanic Garden, Botanic Park, Mount Lofty Botanic Garden, Wittunga Botanic Garden and Beechwood, may be obtained by contacting -

Dr Brian Morley,
Director,
The Botanic Gardens of Adelaide and State Herbarium,
North Terrace,
Adelaide, S.A. 5000,
telephone (08) 228.2321.

The Chelsea Physic Garden — a Living Library

by Pauline Tully

On arriving in London during the second week of May last year, I was delighted to learn that the Physic Garden of Chelsea was open to the public for the first time in over three hundred years.

During this time it had suffered many ups and downs after being founded by the Worshipful Society of Apothecaries of London in 1673. The main interest of the Apothecaries was with officinal plants, but in a period when it was believed that every plant had properties that would cure **something**, all species were looked on as a potential remedy, so more plants were constantly being added to the collection as they became available from newly explored parts of the world. However, after early enthusiasm, this gradually declined until 1721 when Dr Hans Sloane, a wealthy and influential man, bought Chelsea Manor, which also made him owner of the Garden's freehold. Having studied there during his training as a physician he was interested when approached by the Apothecaries and became benefactor to the Society in 1722, by granting a lease of five pounds per annum in perpetuity, thus legally guaranteeing the Garden's existence and maintenance for all time. He also instigated the appointment of Phillip Miller as Gardener — a man who became the greatest horticultural botanist of his time and was in charge at Chelsea for nearly fifty years.

Many famous botanists and scientists were associated with the Physic Garden, and extremely valuable work was accomplished to aid horticulture, agriculture and pharmacy. But again the garden was deteriorating due to the effects of serious atmospheric pollution in London, lack of water (the Garden was cut off from the Thames by the building of the Chelsea Embankment in 1874), and lack of finance. Finally, a Committee of Management was appointed and money was made available from the Charity Commissioners and the Treasury, so the Garden could continue for the benefit of students of scientific research in botany and technical pharmacology.

When I visited the Garden it was purely because of my botanical interests and the fact that it was of historical importance. I was totally unaware of the work accomplished in the small area nor the attainments since 1899 that have benefited mankind.

Not having explored Chelsea on foot before, it was a joy to walk past the rows of beautiful Regency houses along the tree-lined streets until I arrived at Swan Walk, a very narrow street that leads to the Physic Garden. This is enclosed by a high brick wall, and one enters through the original Students' Gate. There is a fairly broad pathway across the width of the Garden crossed by another going its full length, and at their intersection is a statue of Sir Hans Sloane. It was commissioned by the Apothecaries in 1733 so that visitors "... and Posterity, may never forget their Common Benefactor".

The Garden contains some 5000 species of plants for study and therefore a full description would be impossible. The layout is generally divided into beds of plants belonging to the same order, which is helpful when searching for a particular plant. On the left as one enters a square section is divided into beds of officinal, medicinal and dye plants, culinary herbs, and near them homeopathic plants.

There are two rockeries; one shaded by deciduous trees and the other in full sun surrounding a lily pond. Another pond further down is thick with many kinds of water plants. Of course botanical species from many countries are to be found. There is a section devoted to South America, another to South Africa, a Californian Border, Mediterranean Border, and a quite large area of Australian and New Zealand shrubs and trees. Of these four species of Eucalpts and an *Acacia dealbata* represent our country as well as several Melaleucas, Olearia, Correa and Hakea.

One of the most attractive trees in the Garden is a very old *Koelreuteria* — lovely in leaf and flower, but its bare twisted branches must make an equally interesting pattern silhouetted against a winter sky. It is considered the best specimen of its kind in England, and a thirty foot Olive tree, the biggest in Britain, bears and ripens fruit each year.

A second visit to the Garden in late July was again full of interest as there were many different plants in flower, and in the vegetable garden a collection of vegetables at their best, which I hoped would find their way to some fortunate person's dinner table! One part of the Garden was massed with *Romneya trichocalyx* — the smaller of the two Tree Poppy shrubs — and their scent was a delight. In fact the air was full of perfume from verbena, lavender and many other herbs, as well as the older species of the rose. On this sunny day there was a crowd of people enjoying the sights in this charming, sheltered place, and most of them enthusiastic gardeners. Automatically answering the question of one of them "Can you tell me the name of this?" I soon found that I had become a rather popular Aussie. Unfortunately the only plan of the Garden available was not detailed, and it seemed there was a need for a guide or helpers to supply information. Perhaps this need will be filled in the future as after all no one could have anticipated the great influx of visitors on being opened for the first time.

There are possibly many like myself who are unaware of the valuable work being done at Chelsea. The research into plant life has brought vast economic value in food production, the available range of medicinal drug plants and a greater understanding of the biochemistry of the medicinally effective material by inoculation. The enormous amount of work being accomplished in the field of botany is not really known to the general public. At the Physic Garden it all began — at this remarkable place which has been described as — a Living Library.

Woodside Herbs

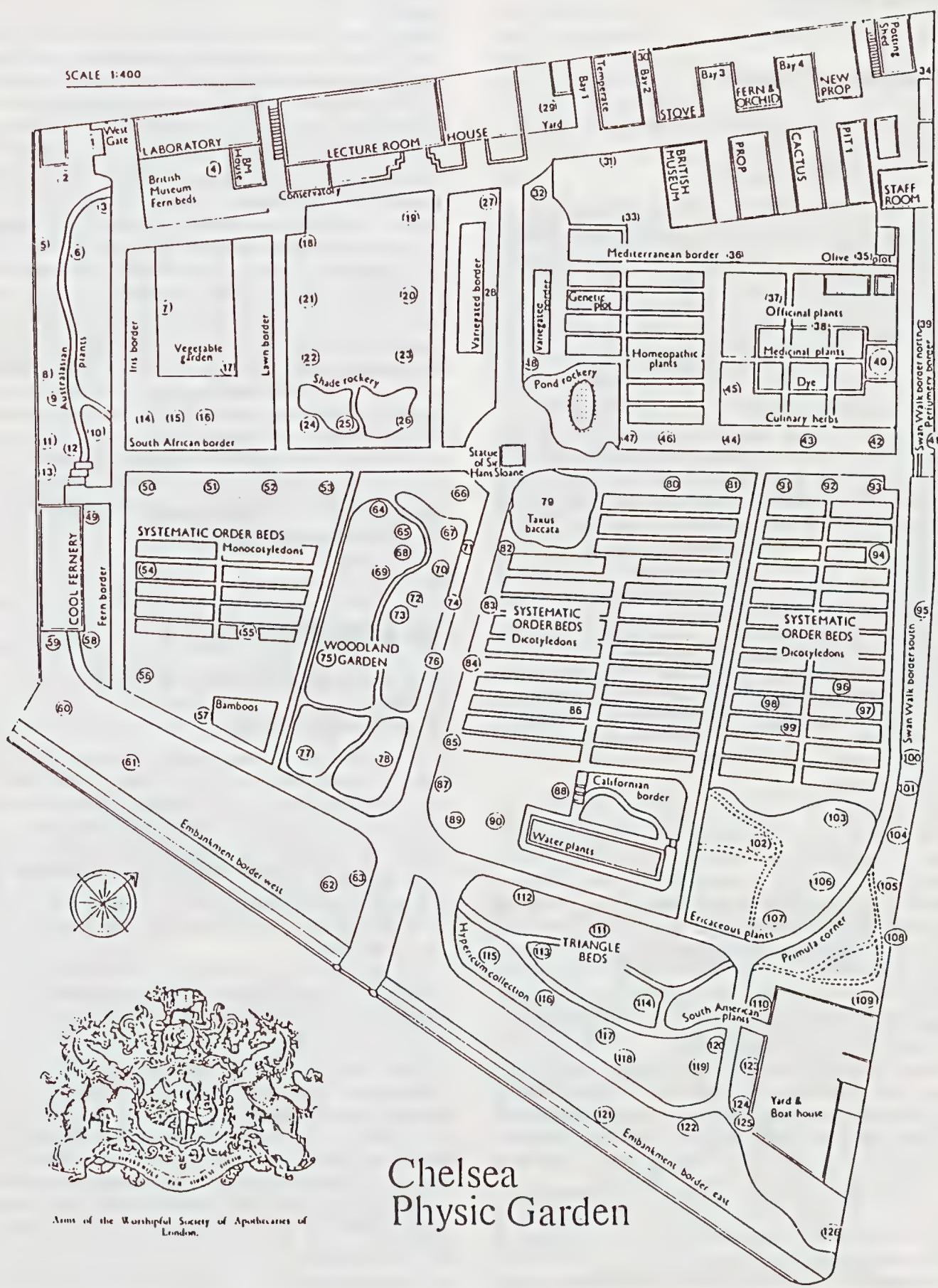
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Chelsea Physic Garden

BOOK REVIEWS

Climbing Plants

by Kenneth A. Beckett. Published by Croom Helm, London.
reviewed by John Patrick.

This is another title in the excellent Croom Helm series of publications of which I have reviewed **The Rock Gardener's Handbook** in the last issue of this journal. The title currently under consideration is without doubt the best in the series to have come to my attention, and should find a place on the bookshelves of all enthusiastic gardeners. I say this with due regard to the fact that it is essentially written for the British and North American markets and this does not make all the contents applicable to Australia. Yet so many plants are included which in England would be considered half-hardy and in Australia would make fine garden subjects that it contains valuable information not otherwise readily available.

The author, Kenneth Beckett, has handled his subject thoroughly in five chapters including an Introduction. He bases his discussion of the habits of climbing plants on their ecological origin, discussing their position in ecosystems and relating this to their potential for use in the garden. More than this he relates their growth characteristics to methods of cultivation, separating climbers into four groups — those with twining stems, tendrils, adhesive aerial roots and hooks, and adding a fifth which might hardly be considered as climbing, namely the scramblers.

Their garden uses he divides into three, clothing an uninteresting wall, improving the foliage of an otherwise unacceptable tree or clothing a man-made frame, e.g. *Wistaria* on a pergola. I might add that given suitable training some climbers may also be used as very effective ground-covers. *Hydrangea petiolaris* planted at the top of a slope can achieve this, its dense branching and attractive foliage making a valuable contribution to weed suppression and bank stability.

Essentially climbers root in the earth floor beneath trees and shrubs, and from this location work their way into the upper branches of their supporting hosts, at the same time bringing themselves into sunlight. In these circumstances their roots enjoy shade, moisture and cool soil high in humus content. Similar conditions are essential if our climbers are to perform for us in our own gardens and if given these requirements they are usually very successful garden subjects. Some I might add can be too successful. I constantly find myself reminding my wife that the rather dull *Kennedia* covering our fence needs to be removed. It shows remarkable vigour, covering our *Amelanchier canadensis* and the neighbour's lemon at a frightening rate. If she doesn't act soon I may even have to do something myself!

Kenneth Beckett's book is made especially attractive by the author's writing style, informative without ever becoming turgid or dull, and by the excellent illustrations, both colour photographs and line drawings, which help to illuminate the text. I might suggest that he is not terribly adventurous in his photographic illustrations, showing some plants frequently featured elsewhere.

The text contains both the common, giving praise where this is due, and the less common names, in this way providing for both the novice and the more experienced gardener. I have found myself very satisfied to find several plants, new to my experience and seen in gardens this summer, described and illustrated here, pro-

viding me with a new awareness of the role and availability of climbers.

Sadly, that which stands out in my mind was in the garden of a nurseryman who at that time was bemoaning his lack of further specimens. As inevitably happens, visitors seeing the plant flower, had overwhelmed him with requests for it and he had, regrettably, only this one plant grown from seed from Wisley. *Rhodochiton atrosanguineum* was the subject in question and quite a delight it is too. We learn from Beckett that it is Mexican in origin, an evergreen perennial with long stalks acting as tendrils. More intriguing are its flowers, with a five-lobed red calyx "rather like a coolie's hat", from which hangs a deep purple-red tubular corolla "its tip expanded into five blunt petal lobes". Since we are assured that it flowers for most of the year I can only say that it seems to be a potential winner. Snap one up if you can see it.

The more frequently grown climbers, for example roses, clematis, and ivy, are assessed and described but understandably not as thoroughly as they are in other texts on the particular groups. However it is the less well known subjects, many of which deserve to be more widely cultivated, that attract attention, for example the *Bomarea*, *Lapageria*, *Mandevillas*, *Schizophragmas* and *Trachelospermum*.

I found this both an enjoyable and informative work on a subject of considerable interest. There can be few gardeners who do not have at least one unsightly wall or spare tree to give home to a climber. After reading **Climbing Plants** I should be surprised if one didn't identify more opportunities.

An Irish Florilegium

by Charles Nelson; published by Thames and Hudson.
reviewed by Brian Morley.

Charles Nelson and I have shared a somewhat similar career and have often corresponded, yet until the summer of 1983, had never met. Both graduates of the University of Wales, both having done Ph.Ds overseas, he in Australia, I in Jamaica, and on completion he succeeded me as Taxonomist at the National Botanic Garden, Glasnevin. I took up a post in Australia, moving there in 1975 about the same time as the Hon. Rose Talbot, sister of the late Lord Talbot de Malahide; I first met Nelson in the garden at Malahide, Co. Dublin, where I also first met Rose "Souvenir de St. Anns" (see later).

The simultaneous production of his "Irish Florilegium", published by Thames and Hudson, and "Flowering Plants in Australia", edited by Hellmut Toelken and myself, and published by Rigby in 1983, provided an opportunity for us to exchange review copies.

Nelson has written straightforward and informed commentaries to the 48 watercolour paintings of Wendy Walsh; the artist is perhaps best known for her Irish stamp fauna and flora designs produced since 1978. Her work is accomplished, crisp and most attractive; my only observation is that the botanical details when shown are rather small and in some plates, such as *Gentiana verna*, Pl 4, *Dryas octopetala*, Pl 2, or *Geranium sanguineum*, Pl 6, parts of the root system might have been illustrated to advantage. The distinctive sorus of *Trichomanes* could have been shown. Some reference should have been made to *Umbilicus* which occurs "unannounced" on the same plate as *Euphorbia hyberna*, Pl 9. The

choice of plants illustrated follows three themes; native plants such as *Arbutus unedo*; garden cultivars such as *Rosa "Souvenir de St. Anns"*; and finally plants with Irish botanist or plant explorer connections such as *Romneya coulteri*.

Ruth Isabel Ross, a journalist and author, has written an evocative introduction of the ways in which the "Irish connection" has repeatedly featured in botanical and horticultural endeavour. We need only mention Patrick Browne of Woodstock, Co. Mayo, and his pioneering botanical work in Jamaica; James Drummond, a Scot, but curator of the Cork Botanic Garden before becoming a plant hunter in Australia; William Robinson and his revolutionary influence on garden design; Augustine Henry and his plant collecting work in China; William Henry Harvey and his work on seaweeds and also the flora of South Africa. One could go on. Ross begins her account with the Greek philosophers, making only brief mention of the way in which indigenous plants featured in poetry. More substantial pre-Christian plant lore existed in Ireland and it would perhaps have been worth examining the tree alphabets discussed by Robert Graves (*The White Goddess*, 1961), and related issues concerning the Ogham alphabet.

The quality of production of the book is what we would expect from the publisher; the boards are substantial and cloth bound. It is most encouraging to find that the Bank of Ireland supported the publication and the bank is to be congratulated at its enterprise.

At sixty pounds this work is a collectors' item; a celebration of Irish plantsmanship. I understand that a sequel is in production, so understandably successful has the first issue been. I look forward to, perhaps, some reference to the Ballawley *Bergenia* cultivars, some of the late Miss Findlater's *Nerine* hybrids, a Lloyd-Praeger *Sedum* or two, the Glasnevin form of *Carpentaria californica* and *Exochorda* cultivar, and perhaps a passing reference to William Harris (1860-1920) who besides making extensive plant collections in Jamaica and helping to curate the several botanic gardens on the island, was a friend of a Miss Walder whose name is still commemorated in the village of Walderston near Mandeville, where I carried out much of my post-graduate fieldwork so many years ago!

the general principles to be followed. He covers such procedures as thinning the canopy of a tree, removing suckers, root pruning, clipping of hedge plants, removing branches and treating wounds, training wall shrubs, and more.

For convenience, plants are dealt with in eleven groups — evergreen and deciduous shrubs, evergreen and deciduous trees, herbaceous perennials, climbers, fruit trees, bushes and vines, roses and wall plants. The treatment given to each group is somewhat uneven. For example fruit trees are dealt with in considerable detail (11 pages) and very well, even such comparatively uncommon practices as oblique palmette training being described. On the other hand roses are dealt with in rather general terms (only 3 pages), and I found the division of climbing roses into "climbing hybrid tea and floribunda types" and "large-flowered climbers" (in which are included Banksia roses) rather curious. One has the feeling that Mr Elliott is not altogether on familiar ground in this section, but he gets out of the problem by saying this "there is quite a variation in the growth habits of these types of roses, and it may take a few years until the best pruning treatment is found to suit a specific plant".

The plant lists at the rear of the book, which give a series of code letters to denote pruning treatment (e.g. H = hard prune, S = prune in summer) are exhaustive, with more than 900 entries. I looked in vain for any omissions, though naturally the lists are restricted to generic names, so with the larger and more diverse genera the instructions are general rather than specific.

Some may criticise the line drawings as being rather crude. However they convey the message that is intended quite clearly, and in a way their lack of sophistication adds a touch of lightness to a rather ponderous style of writing. There are a few errors of syntax that could have been corrected by tighter editing.

But all in all this book succeeds most admirably in its object. It tells us, clearly and in as much detail as is possible in a book of 120 odd pages, how, why and when to prune the plants that grow in our gardens. There is no excuse now for indiscriminate snipping and hacking; the "mystique" of pruning exists no more.

Pruning: a practical guide

by Rodger Elliott: published by Lothian Publishing Co. Melbourne: recommended retail price \$9.95.
reviewed by Tim North

Just as taxonomical botanists are sometimes classified, rather arbitrarily, into the splitters and the lumpers, so can gardeners, when it comes to pruning, be classified in the same rather arbitrary fashion into the snippers and the hackers. Pruning is an operation which seems to put some gardeners into a state of trembling fear while driving others into a totally uncharacteristic aggression. Neither the snippers nor the hackers really understand **why** they are doing what they are doing.

It is now some years since Pax Lindsay's little book on pruning was published, and there has not, to my knowledge, been anything else published on the subject specifically for Australian conditions. Rodger Elliott's book, therefore, fills a significant gap in our gardening manuals.

Let me say, straight away, that this is an excellent book. Mr Elliott tells us, in very clear language, why we need to prune and

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Some Books on the History of Gardening

Anchor and Dolphin Books, 23 Franklin Street (PO Box 823), Newport, Rhode Island 02840, U.S.A., have a comprehensive collection of books, both old and new, on horticulture, botany and garden design. The following is a selection of titles from their latest catalogue:

The American Flower Garden Directory, by Robert Buist (New York, 1854): \$25.00

Colonial Gardens; the landscape of George Washington's time; American Society of Landscape Architects (Washington, 1932): \$30.00

Dante's Garden, with legends of the flowers, by Rosemary Cotes (Boston, c.1905): \$12.50

The Romance of the Apothecaries' garden at Chelsea, by F. Dawtrey Drewitt (Cambridge, 1928): \$30.00

Among the Hills, a book of joy in high places, by Reginald Farrer (London 1927): \$50.00

The Amateur Flower Garden, by Shirley Hibberd (London 1871): \$70.00

Chinese Garden Architecture, by Edwin L. Howard (New York, 1931): \$45.00

Gardening for Ladies, and Companion to the Flower Garden, by Jane Loudon (New York, 1847): \$30.00

Indoor Plants, and how to grow them for the drawing room, balcony and greenhouse, by E.A. Maling (London, 1861): \$48.00

Italian Landscapes in Eighteenth Century England, by Elizabeth W. Mainwaring (New York, 1925): \$30.00

Modern American Gardens designed by James Rose (New York, 1967): \$40.00

Les Beaux Jardins de France, ed. Hector Saint-Sauveur (Paris, c.1922): \$125.00

Historic Gardens of Virginia, ed. Edith Tunis Sale (Richmond, 1923): \$35.00

English Gardens, by H. Avray Tipping (London, 1925): \$225.00

Spanish Gardens, their history, type and features, by C.M. Villiers Stuart (London, 1929): \$45.00.



Quotable Quotes

On landscape architects — "unfortunately in that profession, in common with all the other ingredients they use such as soil, stone, and other hard materials and water, they are very apt to designate plants as 'plant material'. It would be difficult to conjure up a more derogatory term. Once again it takes away from the beauty of flowers. Plant material, to me, means such things as raffia, straw hats and coconut matting". (Graham Stuart Thomas, "Three Gardens").

On seeing a so-called "show garden" — "for those that like that sort of thing, it is just the sort of thing they like". (Clarence Elliott).

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Provincial Botanic Gardens in Victoria

The Royal Botanic Gardens Melbourne have undertaken to assess and rejuvenate provincial botanic gardens throughout Victoria. Work is currently being done in Queen Victoria Park in Beechworth and at Malmsbury Botanic Gardens; the latter is to be restored as part of Victoria's 150th anniversary celebrations.

Other gardens on which work will be done at a later date include the botanic gardens of Colac, Camperdown, Boninyong, Maryborough, Castlemaine, Warrnambool, Geelong, Ballarat, Kynton, Daylesford, Bendigo, Hamilton and Portland.

Information on any of these gardens, especially relevant illustrative material, that might aid restoration, is needed. Particular difficulty is being experienced in locating material on Malmsbury Botanic Gardens, its inception and nineteenth and early twentieth century history.

Anyone who is able to help with relevant material is asked to get in touch with Christina Fitz Simons, Royal Botanic Gardens, Birdwood Avenue, South Yarra, Vic. 3141: telephone (03) 63.9424. Material offered will be copied and returned to the owners if required.

A Sketch of Julia's Garden at Narrandera

by Wendy Littlewood

"The purple butterflies fluttered about with gold dust on their wings, visiting each flower in turn; the little lizards crept out of the crevices of the wall and lay basking in the white glare; and the pomegranates split and cracked with the heat, and shewed their bleeding red hearts. Even the pale yellow lemons, that hung in such profusion from the mouldering trellis and along the dim arcades, seemed to have caught a richer colour from the wonderful sunlight, and the magnolias opened their great glove-like blossoms of folded ivory, and filled the air with a sweet, heavy perfume". (Birthday of the Infanta, by Oscar Wilde)

Julia's garden is at least eighty years old. It is approached through a rustic gate shaded by an arbour of pink and blue flowers, an old-fashioned climbing rose, black-eyed susan and the mauve trumpet vine. A brick path leads up to the kitchen and the tank on its somewhat rickety stand, and the perpetually dripping tap. Beneath the tank mosses and moisture-loving herbs like mint abound among asparagus fern. There is a second path; in its cracks and crazing spring interesting little flowering weeds and a few forget-me-nots. This leads to another part of the garden only to be glimpsed in my picture, for it contains a cornucopia of flowering shrubs of many varieties, like Indian hawthorn, lilacs, brunfelsia, sweet mock orange, daphnes and abelia.

Along this path, my friend laid river stones, brought back from daily walks by the Murrumbidgee, filled in between with a local sandy red soil. Here she planted stripy-petalled petunias, electric-blue lobelia and alyssum, together with parsley and chives. The effect is that of a bright Moorish carpet.

If you look at the drawing, you will see that the middle distance is dominated by an old lattice structure, probably once a shade-house, now seemingly supported by a gnarled wistaria, and hung about with convolvulus and highly-scented honeysuckle. Homely plants like geraniums, lavender, camellias and lilies complete my picture of the garden.

I worked on the drawing from the cool of the verandah, my paper spread out on an old pine table. In the drowsy stillness of an Australian summer, with the smell of baked earth and eucalyptus brought by the occasional breath of wind, there was an almost narcotic heaviness of perfume that lay in pools about the garden, waiting to be disturbed and savoured. The buzzing of flies provided counterpoint.

The dripping tap, instead of fountains, the stillness in which bees shouldered their way among the honeysuckle, the jester-like antics and sweet song of bulbul like the lazing burblings of a hookah, suggested an antipodean Alhambra. I thought of all those people, not so long ago, who, under the spell of a new land which they could not contain, gave up trying to create an English garden; who had removed paper hats from their roses and let them run riot . . . banks of roses on bush timber, under which ferns and lilies grew, but paspalum too . . . fences over which the spoor of Scotch thistle and dandelion floated in the sluggish air.



Julia's Garden (continued)

Perhaps they needed something that breathed, but which breathed familiar odours to overlay the pervading heat and dust, strong essences, garden tinctures; something to remind them of roses rambling over a wall where lawns ran down to the sea. The plants adapted themselves, nevertheless.

Gardening, which maps out so much of ourselves and our aesthetic aspirations, should accept this drugged and lazy quality, for we need now, as we did then, gardens which, after the heat of day, release their stored perfumes; gardens in which, for a brief time before the mosquitoes and the dark, we can find ourselves in Paradise.

Julia's garden has never been tidied up or set out in an orderly fashion. Here is a garden where the plants that were not suitable have not survived, where the pumpkin vine grew from thrown-out peelings, and the black-eyed susan grew over that.

The luminosity of the landscape is distilled into perfume and essence. I think this is what an Australian garden should be.



The Three Chestnuts

by Jean Galbraith

Cape Chestnut, Horse Chestnut and Sweet Chestnut all grow in this garden — or used to. The Cape and Horse Chestnut still do but the Sweet Chestnut, more than sixty years old, did not survive the third dry summer. I thought it might sprout again, but if it does it must be from the root, for the trunk and branches are dry and brown. I did not water it, or any of the established trees, thinking that being deep rooted they would survive. All but three trees have done so, but the Weeping Willow, Judas Tree and Sweet Chestnut have gone.

It is normal for trees to drop their leaves during droughts to minimise water loss, since most evaporation takes place from the leaves. However, these trees are too dry to shoot again. It will be easy to push a willow branch into the ground in a damp spot after drought-breaking rains. It is sure to grow, but one cannot hope to replace others that way.

The Sweet Chestnut had already become the support for the early flowering Maiden's Blush rose, which it seems nothing can kill, but the Judas Tree, which for many years had arched over the living room windows with its pink flowers in spring before the waxy leaves appear, cannot be replaced in my lifetime.

Years ago, when Lila, a garden-loving friend, lived in the house on the hill she used to come down on one of the clear blue days of early spring just to stand under the Judas Tree and look at the blue of a cloudless sky through the flowers.

I shall miss it most. I am sorry about the chestnut tree, but it had never borne many chestnuts, probably because there is not another tree near enough for cross-pollination; but the sight of its long cream catkins, and their curious pungent scent, was always a pleasure. Besides there were always a few dozen brown nuts to find amongst the past year's fallen leaves and to roast at the open fire.

The Cape Chestnut, over fifty years old, is a big tree with smooth bright leaves that change in winter to a clear yellow, which makes it, from a distance, look like a wattle in bloom. Until a few years ago it did not even flower, nor was it watered, as it showed no signs

of stress. Then I planted a *Magnolia grandiflora*, the Laurel Magnolia, with giant white, lemon-scented flowers. The Laurel Magnolia grows only slowly when young if it does not have abundant water, so mine was watered more than most of the other trees, and given a bucket full of washing water now and then. The runoff from that watering went directly to the Cape Chestnut's roots. After a year or two it began to flower and since has flowered every summer, although the succession of dry seasons has not suited it. Almost every branchlet used to end in a cluster of flowers, with leaves standing out behind them like a halo, but in summer 1982, when neither the Cape Chestnut nor the Magnolia could be given much water, there were very few flowers.

I have just picked one of these clusters and brought it inside so I can look closely at its spidery flowers. Each one has five very pale pink outward curving petals behind five rather narrow white ones that are speckled with crimson. In the centre of these is a red style and five long erect stamens as thin as white cotton. The cluster was worth picking with its halo of leaves, each leaf about five inches long and up to two inches wide, dark green and finely veined.

The Horse Chestnut is quite different. Its leaves unfold crinkled and soft, almost golden and changing gradually to bright green, delicately pleated at first and always patterned by impressed veins. Each leaf is like a hand with, usually, five or seven spreading leaflets slightly smaller than the leaves of the Cape Chestnut. It is beautiful enough to grow for the leaves alone, but it has three other charms; autumn leaves that fall and leave perfect little horseshoe-shaped scars, complete with a half-circle of tiny nails; glossy brown nuts, inedible but excellent for a game of "conkers"; and thick erect "candles" of white (or sometimes deep pink) flowers, freckled with red and yellow. Since heat and lack of water have twice turned the green Horse Chestnut leaves to crisp brown, and twice the tree has sprouted again I think it did very well to make one short candle of flowers last year. I dug a hole beside it early in the drought, and that has been filled now and again with buckets of water, but on very hot days, even if it was watered, the roots could not absorb enough moisture to compensate for that evaporated by the sun.

That same problem resulted in a number of losses, but all were exotic plants. Australian plants, unless they come from rain forest or other damp places, are better able to endure Australian summers. They conserve moisture by having smaller exposed leaf surfaces. For our Horse Chestnut, and other threatened plants, we can only hope for an end to the drought before they, too, succumb.

(Note: this was written before the breaking of the drought — there were no losses during the gentle summer of 1983/84.)



Our Next Issue

The August issue of **The Australian Garden Journal** will focus on South America. Dr Brian Morley will write on "Temperate South American plants for Australian gardens": Noel Lothian will write on "Plant collecting in Chile": Polly Park on "Roberto Burle Marx, Architect of Nature", and John Patrick on "Mexican Courtyard Gardens".

There will also be all the usual features — book reviews, information on new equipment and tools, and "Garden Cuttings", bringing news of horticultural activities of many kinds from around the world.

Publication date will be approximately 9th August.

Centre for the Conservation of Historic Parks and Gardens, York, England

The following is the general prospectus for this Centre, established at the Institute of Advanced Architectural Studies, University of York—

It has been recognized for some time that historic parks and gardens are an important aspect of Britain's cultural heritage, and one in which this country has made a particularly significant contribution to European civilization. However, it is only comparatively recently that they have begun to receive a similar degree of attention to that which is devoted to other components of the heritage, such as historic buildings and towns.

It is against this background that the Institute of Advanced Architectural Studies, with the support of the Countryside Commission has set up a **Centre to Promote the Study and Conservation of Historic Parks and Gardens**. Although the Centre was formally established in November 1982, it has evolved from research work which has been in progress at the Institute since 1979.

Programme

The programme of work that the Centre aims to undertake in the years to come is wide ranging. It includes survey work, compilation of a national inventory of sites, education, preparation of publications, specific research projects, promotion, liaison and advisory work. At present the Centre is limited in size, but its programme will expand as it secures further outside financial support.

Priorities

One project to which particular priority is attached is the organization, development and co-ordination of a **National Survey and Inventory of Historic Parks and Gardens**. This will follow on from the Institute of Advanced Architectural Studies "Trial Survey" that was in operation between 1979 and 1981 and tested a number of suitable methods.

The National Inventory is necessarily a long-term project, and it will provide, on a gradually cumulative basis, a scholarly and comprehensive record of the historic parks and gardens of this country. It is hoped that appropriate links will be developed with other surveys which relate to historic parks and gardens, whether they are national, county or more local in their coverage.

The selective register of historic parks and gardens which has been proposed for England in the National Heritage Act (1983) is different in concept from the National Inventory.

Other projects which are seen as priorities are the development of:

An **educational programme** for those who are involved in conservation. The Centre proposes to organize and promote events such as lectures, specialist seminars, local study workshops or national conferences. These may be held at York or elsewhere.

A programme of **publications** on the conservation and history of parks and gardens. It is envisaged that these will include information sheets, guidance notes, bibliographies and reports which will be based on information resulting from research projects, the National Inventory and other work undertaken by the Centre.

A programme of **research** on topics which are of particular relevance to the conservation and history of parks and gardens. Individual projects may in some cases be of quite short duration. It is also intended that active or completed conservation and res-

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toration schemes should be studied with a view to learning, from practical experience, about the techniques employed.

A scheme for promoting the conservation and restoration of historic parks and gardens through **liaison and field work**. It is fully recognized that there are many other organizations and individuals that have an important part to play, and it will be a fundamental element in the Centre's work to maintain links with them and to assist them when it is able.

Accommodation and Staffing

The Centre is housed at the Institute of Advanced Architectural Studies. The Institute, which has its own accommodation and library at the King's Manor, York, forms part of the University of York. It is internationally known for its interest in the conservation of historic buildings and for its promotion of mid-career education.

Peter Goodchild, BSc, Dip Land Des, Dip Cons Studies (York), has been appointed as full-time Research Fellow to the Centre, and this new post is funded by the Countryside Commission. Day to day work is under the joint direction of Dr D. Linstrum, FSA, RIBA, (Radcliffe Reader in Architectural History and Conservation) and Dr J.R.B. Taylor, MA, RIBA, (Research Director). An Advisory Committee has also been formed for the Centre, with members drawn from interested national organizations.

The Harlequin Series of Pelargonium — Rouletta's Remarkable Relations

by Jean Llewellyn

This series, soon to be released in Sydney, is the result of work done by Dr Cassells of Wye College, England, in an experiment which has been described by many horticulturists as "an impossible dream". Be that as it may — it worked!

"Rouletta", an ivy-leaved pelargonium, released to the trade about ten years ago, caused a sensation at the time. It is still one of the most popular, for never before in the history of the ivy-leaved group had a plant been produced with such a striking combination of colours in its flowers. Described as a "picotée" type, i.e. a flower where the colour is confined to the edge of the petals with the remainder of the flower white or a very pale contrasting colour, "Rouletta" with its dark red and white colour combination, literally took the world by storm. True, it has been found that in some areas, when grown under stress, it will produce "variations on a theme" but this has not diminished its popularity.

How did all this come about, and what are Rouletta's Remarkable Relations? It all began a long time ago, in the early 1800s. At that time a new ivy-leaved pelargonium was introduced with flowers, double in form, of the softest silvery-pink. Named "Madame Crousse" it was an instant success and went on to produce, over the years, many interesting deviations from its normal type.

The first of these "sports" to be recorded was a plant named "Mrs Banks", similar to the parent but with white flowers. Another, introduced in the 1950s was "White Mesh". This plant was from a variegated leaf sport of "Madame Crousse", found by a well-known Australian nurseryman in South Australia. The late Ted Both, always alert to something new and different, subsequently introduced to the Australian market "White Mesh". A descriptive name, for the foliage was clearly meshed with creamy-white. The chosen name, through no fault of its own, has had a rather chequered career. Known also as "Crocodile", "Alligator" and "Sussex Lace" it should be correctly stated as "White Mesh".

Not content with such diversity of flower colour and leaf variegation "Madame Crousse" subsequently sported a melanotic form, i.e. with flowers of the deepest blood red, the deepest red yet produced in the ivy-leaved pelargoniums until . . .

In Mexico, in the early 1970s, "Mexican Beauty" produced a sport having flower colour variation such as had not been seen before. The flowers of red and white were outstanding and attracted the attention of horticulturists, nurserymen, botanists and scientists. It was introduced to the trade by Wm. E. Schmidt of U.S.A., and named "Rouletta". However, this name was to suffer the fate of others before it and within a very short space of time had attracted at least five synonyms. These are "Mexicanerin", "Mexicana", "Bayview Peppermint", "Peppermint Candy" and "Cocktail". "Rouletta", however, remains the correct and first validly published name.

Stocks of "Rouletta" reached Hall's Court Nursery in England, and while there attracted the attention of Dr Alan Cassells, MSc, PhD, (now Professor Cassells), who was working at that time at Wye College on the tissue culturing of pelargoniums. As mentioned earlier "Rouletta", in her search for applause, has decked herself out with many varying colour combinations when under stress, even to reverting to the parent "Mexican Beauty". However this did not stop the progress to be achieved by this beauty. Dr Cassells, having in mind that the variation in colour might be caused by a virus —

albeit a harmless one — decided to experiment using the technique of grafting scions of "Rouletta" on to other ivy-leaved pelargoniums. An extensive programme was commenced with his then research student, George Minas (now Dr Minas) and stock plants were chosen with flowers of strong, clear colour, so that any picotée effect that resulted would contrast well with the white of the rest of the flower.

The "impossible dream" came true and all the graft combinations showed a change in the colour pattern of the flower on the stock plants. About this time Dr Cassells was appointed to the Chair of Botany at University College, Cork, and it was decided that, as Hall's Court Nursery had first introduced Wye College to "Rouletta" the stock plants and the methods of propagation should be handed over to them. And so Rouletta's Remarkable Relations were born and the most commercially attractive ones were subsequently marketed.

The first six of these were marketed by Mr Magson of Hall's Court Nursery. They were introduced to the trade and sold under licence. Marketed under the group name "Harlequin" they are now about to be made available to the Australian public. Soon all will have the opportunity of seeing and perhaps purchasing these plants. All are different, although some not sufficiently so, depending on your taste, but each has its own name and is described below.

Of them all "Picotée" is the closest to a true picotée type flower, others give the impression of striping, and one, "Pretty Girl", is so strongly coloured that the white in the flower is little more than a flushing on some blooms. All beautiful nevertheless and should be seen to be believed.



HARLEQUIN 'PICOTEE'
(photo: A.P. Hamilton)

Harlequin "Alpine Glow" — white edged fuchsia purple.

Harlequin "Mahogany" — the deepest of mahogany red with white.

Harlequin "My Love" — white edged light red.

Harlequin "Rosie O'Day" — white edged rose pink, lighter in colour than "My Love".

Harlequin "Pretty Girl" — orange red with white; quite distinct.

Harlequin "Picotée" white with soft pink picotée edging.

Is this the end of the story? I think not, for others have already been produced in England, and I know of one already showing great promise in Australia. It would appear that the future of "Rouletta" and her Remarkable Relations is assured.

The History of Sundials

by John Ward

When mankind first learned to speak, there was probably no word for that intangible thing we call "time". Primitive people would have been conscious of the passing of days and of seasons, and must have related the course of each day to the rising and setting of the Sun. But it was many thousands of years before man thought of time as something to be measured.

With the coming of agriculture the changing seasons acquired a new importance, as farmers needed to know when to plough and to sow. So the earliest systematic recording of time would have been concerned with the year rather than the day.

The most obvious evidence of seasonal changes appear in the weather, plant growth and animal behaviour. But there were other indicators of which man became aware — the varying altitude of the Sun in the sky, with its effect on the duration of daylight, and the movement of stars (really due to the Earth's own motion).

In any more or less civilised community there would have been those who studied these heavenly indicators, and it was they who produced the first calendars.

They were not helped by the fact that the Sun year (or solar year) does not comprise an exact number of solar days, and is very slightly shorter than the star, or sidereal year. And to fit a precise number of "moons" (lunar months) into either is impossible. The ancient Chinese, Babylonians and Egyptians managed to keep their calendars roughly in step with the seasons by making occasional adjustments — though less efficiently that was done later by the system of leap years.

As social life grew more complex in its organization, people began to feel the need for a more satisfactory way of dividing up their day. Few could have failed to notice that shadows, including their own, changed as the Sun pursued its curved path across the sky.

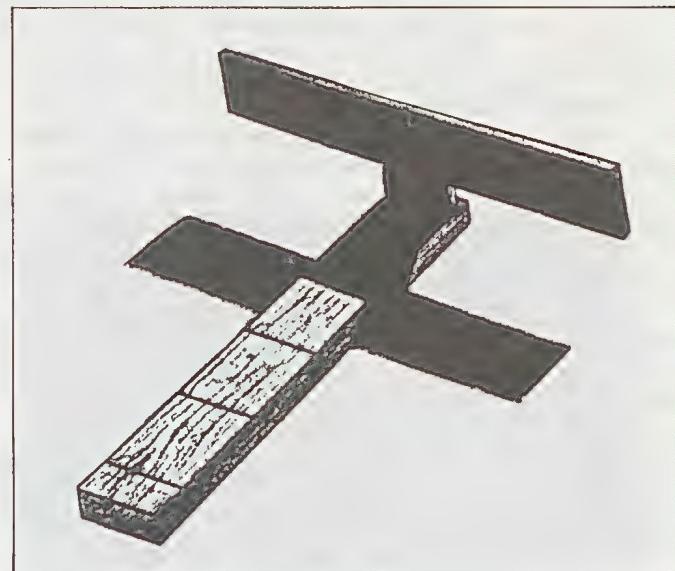
In the Southern Hemisphere shadows would at first point roughly west gradually changing direction to point south at midday and finally east towards nightfall. A shadow's length diminished as the Sun climbed higher, increasing again between midday and sunset. We do not know who first thought of planting a post in the ground and observing the time of day according to the fall of its shadow; but it is known that such **gnomons**, as they came to be called, were in use in Mesopotamia over five thousand years ago.

The next step was to mark lines, or points, in an arc and observe how the shadow of the gnomon fell on each. Thus the sundial was born, and for the first time the day could be considered as divided into measured parts.

One problem with sundials is that the shadow thrown by the Sun, if it falls on a flat surface, moves progressively more slowly between dawn and midday, quickening again as the Sun descends. If the divisions of the sundial are equal, the early morning and late afternoon "hours" are much shorter than those in the middle of the day.

In about 1,500 BC the Egyptians were using a shadow-clock which met this difficulty ingeniously, if not with complete accuracy, by marking long divisions for the earlier and later hours. Another feature was that the hours were marked on a straight, horizontal strip which was laid out in an east-west line. The gnomon was fitted with a cross-bar, whose shadow fell across the strip even when the shadow of the upright missed it. The strip was marked for six hours only, being reversed for the second half of the day (fig 1).

A Babylonian of the fourth century BC tackled the problem of dividing the day into equal parts in a different way, by causing the



An early sundial. The markings gave a very rough estimate of the time of day until the sun set.

gnomon, or "style" as it is also called, to cast its shadow on the curved inside surface of a concave hemisphere. To the Babylonians is attributed the division of daylight into twelve hours.

To allow for the fact that the duration of daylight varies with the distance from the Equator, the style of a horizontal sundial should be parallel to the earth's axis, and point south in the Southern Hemisphere. To achieve this, it is set at an angle corresponding to the latitude of the place where it is installed — in Adelaide, for example, at an angle of about 35 degrees.

Among the limitations of the sundial was the fact that only daylight hours could be measured, and that the length of the hour varied according to the seasonal length of the day. There was also the disadvantage that the sundial is of course useless when the Sun is not visible.

Measurement of time in uniformly equal hours throughout night and day came only with the introduction of devices not dependant on the Sun's apparent movement. The first of these were probably water-clocks, said to have been used in Egypt as early as 1500 BC, and familiar objects in the world of Greece and Rome.

A simple water-clock, or **clepsydra**, a Greek word meaning "water-stealer", would have taken the form of a container marked off to represent hours, which gradually filled with water or was gradually emptied (fig 2). In Rome, in the first century BC, the engineer Vitruvius wrote of a more advanced type of clepsydra. In this a steady flow of water into a container raised a float to which was attached a toothed rod. This engaged in a cog wheel to turn a pointer on a dial (fig 3).

Similar in principle was the hourglass still used in miniature form to time the boiling of an egg. Another device attributed to King Alfred the Great was a candle clock. The candle was marked off in bands indicating the passage of time as it burnt down.

By all these methods, which were in use through the Middle Ages and beyond, it was possible to measure a day of twenty-four hours. But at best they were very inaccurate. It was not until mechanical clocks were invented that man was in sight of a reliable system of time measurement.

Until reliable time keeping was achieved by mechanical clocks the sundial reigned supreme and was used for calibration purposes. Most mechanical clocks were adjusted daily by adjacent sundials until late in the nineteenth century.

A brief summary of the history of sundials is given below:
3000 BC . . . Shadow sticks or gnomons in use in Mesopotamian buildings.

1500 BC . . . Egyptian east-west shadow sticks.

740 BC . . . Ahaz, King of Judah, had a sundial which was described by Isaiah the prophet in the Bible.

600BC . . . The astronomer, Anaximander of Miletus, introduced the sundial and its geometry into Greece.

450 BC . . . Herodotus, a Greek mathematician, had learnt about "sundial poles".

405 BC . . . There were many public sundials in Greece, consisting of tall columns casting shadows, hence the line in Aristophanes' play "The Frogs" — "when the shadow is ten steps long, please come to dinner".

350 BC . . . Berossus, a Chaldean priest at the time of Alexander the Great, devised the **Hemispherium** and **Hemicyclium**. The Chaldeans divided the Zodiac Band in the sky into twelve parts or signs; the year into twelve parts or months, and the week into seven days.

200 BC . . . Sundials were very common in Rome and the **Hemicyclic Sundial** has survived from both Greek and Roman times.

100 AD . . . It was general knowledge that the shadow of an inclined stick, style or gnomon which was parallel to the axis of the Earth's rotation would tell the time reasonably accurately.

600 AD . . . Pope Gregory ordered all churches to have a sundial on their walls so they would know when to pray; most of which were **scratch sundials**.

By the 1400s . . . Mechanical clocks much superior to sand or water clocks had been invented and the day divided into equal periods of twenty-four hours. They were adjusted using **Standard Sundial Time**.

For centuries the periods of light and darkness were split up into an equal number of temporal hours or "Horae temporales" as the Romans called them.



Figure 2

A primitive water-clock or clepsydra. The empty bowl has a small hole in its base. It slowly sinks as it fills with water.

There were often twelve hours during the light time but the length varied according to the time of year.

The astronomers used equal hours called equinoctial or "Horae equinoctiales".

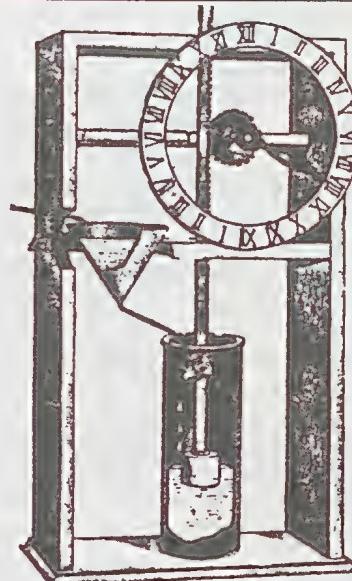


Figure 3

By the 1700s . . . Huyghens created the first accurate mechanical clock controlled by a pendulum. Times repeatable to plus or minus ten seconds were now available.

1700 AD . . . Grandfather clocks not being too portable meant that sundials still remained popular until pocket watches evolved.

Meanwhile the sundial still reigned supreme.

A sundial correctly designed for its latitude of use and correctly installed will tell the time accurately to about twenty minutes or so for many hundreds of years. This error in time telling resulted from an effect referred to as the **Equation of Time Correction**. Due to the motion of the Earth around the Sun following an elliptical path and sweeping out equal areas in unit time as opposed to travelling equal distances in unit time (Kepler's Law) errors were introduced. Furthermore, due to the Earth's motion deviating from the plane of the ecliptic another error in the timekeeping of a sundial was introduced. The time correction resulting from the combination of these two factors gives the **Equation of Time**. Sundials designed for a given latitude and time zone and incorporating this equation of time correction will tell the time accurately to better than one minute for many hundreds of years. The scientific methods of design and manufacture of such sundials will be described in a further article.

(Note: this is the printed version of the first part of a two part lecture given to the South Australian branch of the Australian Institute of Physics in August 1983).



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The Australian Trust for Conservation Volunteers

The Trust was incorporated in Victoria in 1981 as a non-profit making community based organization, with the aim of promoting practical projects throughout Australia, involving people on a voluntary basis in the management and care of their environment. It is concerned mainly with problems such as soil erosion and salinity, and the loss of native fauna and flora habitat which are the results of poor land management and inadequate tree cover. It can also provide assistance to owners of large gardens if those gardens are of historical interest.

It is not, however, a supplier of free labour, and will only accept requests for projects which meet three main criteria — (a) the project does benefit the environment, (b) it is not commercially viable, and (c) that volunteer workers will obtain job satisfaction from it.

Teams comprise up to twelve men and women with a minimum age of 16. Each team provides its own camping gear where necessary, pays at least part of its transport costs (except on day tasks) and contributes to the cost of food. Volunteers are covered throughout Australia by the Trust's Accident and Public Liability Insurance. The cost to landowners is currently \$7.50 per volunteer day for residential tasks, there is no cost for day tasks which are normally worked at weekends and during school holidays.

Typical tasks undertaken in Victoria are:-

- Tree planting and subsequent weeding and mulching.
- Vermin-proof fencing.
- Maintenance and construction of walking trails.
- Erosion control.

Weed control by the Bradley method.
Maintenance of Heritage List buildings.
Establishment and repair of wildlife habitats.

The head office address of the Trust is PO Box 412 Ballarat, Vic. 3350 and the telephone number (053) 32.7490. A New South Wales Division was formed in April this year with an office at 399 Pitt Street, Sydney, telephone (02) 267.7722. Other regional offices are under consideration.

Requests for assistance should be addressed to the offices named above. A minimum of two weeks notice is advisable in order to secure the best available team.

The Trust is based on the British Trust for Conservation Volunteers which has been operating successfully for twenty-five years. Patron of the Australian Trust is Sir Thomas Ramsay, C.M.G.

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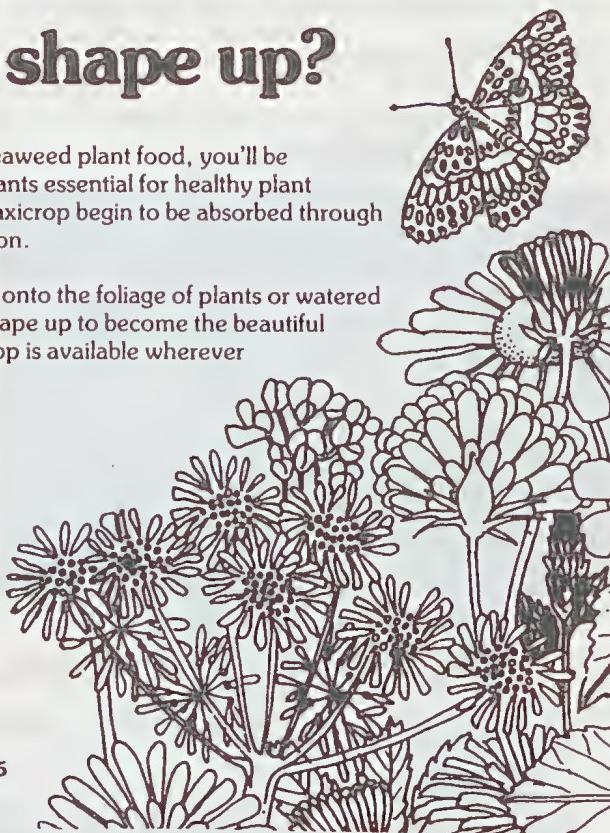
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Some Unusual Annuals

Thomson and Morgan have again extended their Simplicity range of packet seeds with some interesting introductions and re-introductions, all of which make a welcome change from the usual stereotyped run of annual bedding plants.

One that may be unfamiliar to many gardeners is the Californian Bluebell (*Phacelia tanacetifolia*), a frost-hardy annual with attractive lavender-blue flower heads, each consisting of a large number of bell-shaped flowers with prominent stamens. The flowers are heavily scented and excellent for cutting. This plant will grow in most soils and has a low water requirement. Two others that may be unfamiliar and now included in this range are the Mountain Phlox (*Linanthus grandiflorus*) also from California, a hardy annual that produces lovely lavender-pink flowers that turn white as they age; flowers are produced in profusion from spring through summer till autumn; and the Wind Poppy (*Stylomecon heterophylla*), a frost-resistant annual from western North America with large orange flowers, sometimes as wide as 10 cm in diameter; it flowers from late spring through summer.

Among new varieties of more familiar plants are a dwarf Hollyhock called "Pinafore" that grows no higher than 100 cm and produces up to five flower spikes on each plant, and a white Lobelia called "Snowball".

Seeds of these plants are now available on all Thomson and Morgan seed stands in nurseries, garden centres and department stores.



MOUNTAIN PHLOX

A Garden with a Difference

Bowral is known for its many beautiful gardens which attract thousands of visitors to it every year. It is soon to have a unique garden attraction, a scented garden, open to all but designed so that the disabled can enjoy the experience of being within a garden.

The project was initiated last year by the Highlands Garden Society which, in conjunction with the Lions Club of Bowral and Berrima District Industries, set up a Working Committee. It has the support of Wingecarribee Shire Council, with two Councillors being on the Committee.

The proposal is to landscape two parcels of land on opposite sides of the main road through Bowral, thus creating a green "gateway" into Bowral from the south. Part of one of the parcels was developed by the Lions Club as a rose garden some fifteen or twenty years ago. A rose garden will probably be part of the finished design, but is likely to take a different form from the present one.

As well as featuring plantings of material that will stimulate the senses, it is envisaged that a barbecue/picnic area and a children's playground will be constructed on the site. Pathways, steps, railings, toilet facilities and playground equipment will be designed with the disabled in mind, whether they be blind, deaf or in a wheelchair.

Students from the School of Landscape Architecture, University of New South Wales, are at present involved in drawing up a design for this project, and construction should be under way by spring this year.

The project is to be financed partly by the Lions Club, with, it is hoped, support from all levels of government, the public and private industry.



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garden

cuttings

Horticultural crops in North Queensland

The wet coastal region of North Queensland could treble its existing horticultural production, according to Mr Robin Barke, Assistant Director of Horticultural Research in the Queensland Department of Primary Industry. However, this will depend directly on its ability to develop additional markets both within Australia and overseas, since local markets are generally well supplied throughout the year. Mr Barke estimates that of the total of 10,000 hectares of land suitable for horticulture in the region only 3,000 are currently in use.

North Queensland is well situated to supply overseas markets, particularly South East Asia, because it produces fruit at different times of the year compared with those countries. But, Mr Barke points out, these are competitive markets which demand high quality produce effectively presented at competitive prices. Other southern hemisphere countries, like New Zealand and South Africa, are aiming at these markets. Australia's horticultural industry has had a variable record on export markets, largely because the individual growers have put produce of varying quality, presentation and packaging into these highly competitive markets.

Mr Barke advocates the establishment of marketing groups large enough to employ marketing specialists, obtain seasonal supplies and act as strong negotiators on behalf of growers.

(from The Rare Fruit Council Newsletter no. 25, February 1984).

New techniques in germinating seed.

The use of polyethylene glycol (PEG) in treating old and damaged seed was reported in "Garden Cuttings" in December 1983. In tests in California tomato seed "primed" with PEG emerged ten days earlier than unprimed seed, and a much higher percentage of seeds germinated.

A 1% solution of cytokinin, a hormone found in seaweed extract, also speeds germination, and another method under investigation in the United States involves photovoltaic stimulation. In this a photovoltaic solar cell generates electricity and feeds it into the soil, thus giving the seeds an electrical stimulus.

New plants from botanic gardens.

Some of America's botanic gardens are now playing an active part in the introduction of new plants into cultivation. Brookside Gardens, in Maryland, have an especially notable introduction programme. Over 1000 ornamental plants have been acquired from Japan, Korea, England and Holland and are now being evaluated in co-operation with public gardens and nurseries all over the country. More than thirty new Japanese cultivars are in the programme, and hopefully many of these will soon be available in the nursery trade. Some that have been chosen for beautiful and stable variegation include *Euonymus sieboldiana* "Shimoyo" ("frosty night"), *Eriobotrya japonica* "Yukige" ("melting snow"), *Forsythia koreana* "Ilgwang" ("sunlight"), *Juniperus conferta* "Akebono" ("dawn"), and *Osmanthus heterophyllus* "Goshiki" ("five colours").

An edible bulb.

Camassia esculenta, the Camass Lily or Quamash, is an easily grown and very hardy bulbous plant that bears racemes of white to dark blue flowers in spring. The bulb, normally about the size of a walnut, is also edible, and Luther Burbank has commented that its flavour and texture are so high as to suggest competition with the potato. Research at the University of Washington has shown that a tiny amount of flour made from the Camass bulb and added to wheat flour greatly improves its dough-making quality.

An expensive "cuppa".

An advertisement in a major national American magazine offers a pill that increases energy, alertness and well-being, decreases appetite and even cures certain minor ailments. Made from "an oriental shrub that has been utilized for over 4000 years" the pills are sold at 60 for \$19.95, 120 for \$37.60, and 180 for \$52.50. The advertisement goes on to identify this mystery substance as the dried leaves of Lapsang, "a variety of *Thea sinensis*", which, of course, to ordinary people is tea!

Landscape and the Arts

A conference on "Landscape and the Arts, Europe 1700 to 1900" will be held at the Humanities Research Centre, Australian National University, Canberra, from 12th to 15th July 1984.

The provisional programme lists eighteen speakers, from Australian, New Zealand, English, Italian and American Universities, on topics ranging from "Landscape in 18th Century Theory and Criticism" to "Approaches to the Imagery of Impressionist Landscape Painting".

The registration fee for this Conference is \$25.00 and accommodation in Bruce Hall, A.N.U., is available at reasonable rates. Further information is available from The Secretary, Humanities Research Centre, Australian National University, GPO Box 4 Canberra, A.C.T. 2601 (telephone (062) 49.4786).

Flowers in Mythology.

In ancient Greek mythology Iris was the Goddess of the Rainbow, the youth Hyacinth was transformed into a flower, Narcissus gazed at his reflection in the water, and Asphodel was the sign of the return of spring.

A new fertilizer from coal.

A new technology being developed in the U.S. may provide an important new source of fertilizer. In a process called fluidized bed combustion (FBC) coal is burnt in a slurry of limestone or dolomite, thus reducing sulphur and nitrogen emissions by more than 90%. These pollutants, which become a major source of acid rain if released into the atmosphere, are trapped in a granular residue that is surprisingly rich in other plant nutrients, including calcium and magnesium. Two problems, however, remain to be overcome; one is that certain extraneous compounds can make some of the nutrients unavailable to crops; the other is that the FBC residue often contains heavy metals that can be toxic to plants, animals and humans. Plant growth studies, however, have been promising, and tomatoes, lettuce, radishes and other vegetables that tend to accumulate heavy metals showed no significant uptake after being fertilized with FBC residue.

(from The U.S. Agricultural Research, July/August 1983).

(Continued on back page)

garden market place

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Garden Cuttings - continued

International Horticultural Congress.

The XXIInd International Horticultural Congress will be held at the University of California, Davis, CA 95616, from 11th to 20th August 1986.

A gardening survey in the U.S.

A National Gardening Survey conducted in the U.S. during 1983-84 produced, inter alia, the following results:

(a) vegetable and flower gardening maintained its rank as number one outdoor leisure activity in America. It ranked sixth overall, behind watching TV (81%), listening to music (64%), reading (54%), travelling in the car (44%), and going to the movies (43%);

(b) the Midwest ranks as the region with the highest percentage of the nation's gardeners (35%), the East and South each have 24%, and the West has 17%;

(c) suburbs and small towns saw a decline in gardening in 1983, unlike the past two years where gardening was on the increase in those areas;

(d) 81% of American households were involved in at least one form of gardening activity, from flower gardening to lawn care.

The survey was carried out by the Gardens for All/Gallup Organization, which has carried out similar surveys for the past twelve years.

Letters

Dear Sir,

It was with great interest that I read in the February issue of the Journal, the article entitled "A Forgotten Garden in Tasmania".

The part of the article which interested me was the statement that "strangely there were no roses in the garden".

About eleven or twelve years ago my daughter visited Stinking Bay and she came across an old garden in which she found an old rose which so intrigued her that she brought a cutting home. My wife struck the cutting and we now have two bushes growing in our garden. For some time we did not know the name of this rose and we referred to it merely as "Stinking Bay", but it has now been identified as "Celine Forestier".

I do not know whether or not the garden visited by my daughter is the same garden referred to in the article in the Journal, however she is coming to stay with us at Easter and if possible intends to visit Stinking Bay to refresh her memory of the garden which she visited.

Stinking Bay is on Tasman Peninsula, which is joined at Eaglehawk Neck to Forestier Peninsula. The rose "Celine Forestier" was first raised in France in 1842, but I do not know after whom it was named. Perhaps one of your readers may know whether or not there is any connection between the name of Forestier Peninsula and the rose.

Yours faithfully,
J.D.Bushby,
Sandy Bay, Tasmania.

Dear Tim,

I was most interested to read the article on *Gladiolus* species by Barney Hutton in the April 1984 Journal and thought your readers may be interested in the following information.

Of the species mentioned in Mr Hutton's article, we have at Wittunga *G.tristis*, *G.purpureo-auratus* (now *G.papilio*),

G.carneus, and *G.cuspidatus* (now known as *G.undulatus* and very widespread in the Adelaide Hills area).

In our collection at Wittunga we have so far managed to raise to flowering stage 27 species of South African *Gladiolus* and are expanding our collection.

Yours sincerely,
Edward J. McAlister,
Assistant Director,
The Botanic Gardens of Adelaide and State Herbarium, Adelaide, South Australia.

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Gardener, part-time, possibly could become full time for the right person, (male or female). Needs knowledge of English garden practices and herbaceous borders, ability to plan seasonal display's and develop new gardens under direction. Good sense of colour and also good sense of humour!

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